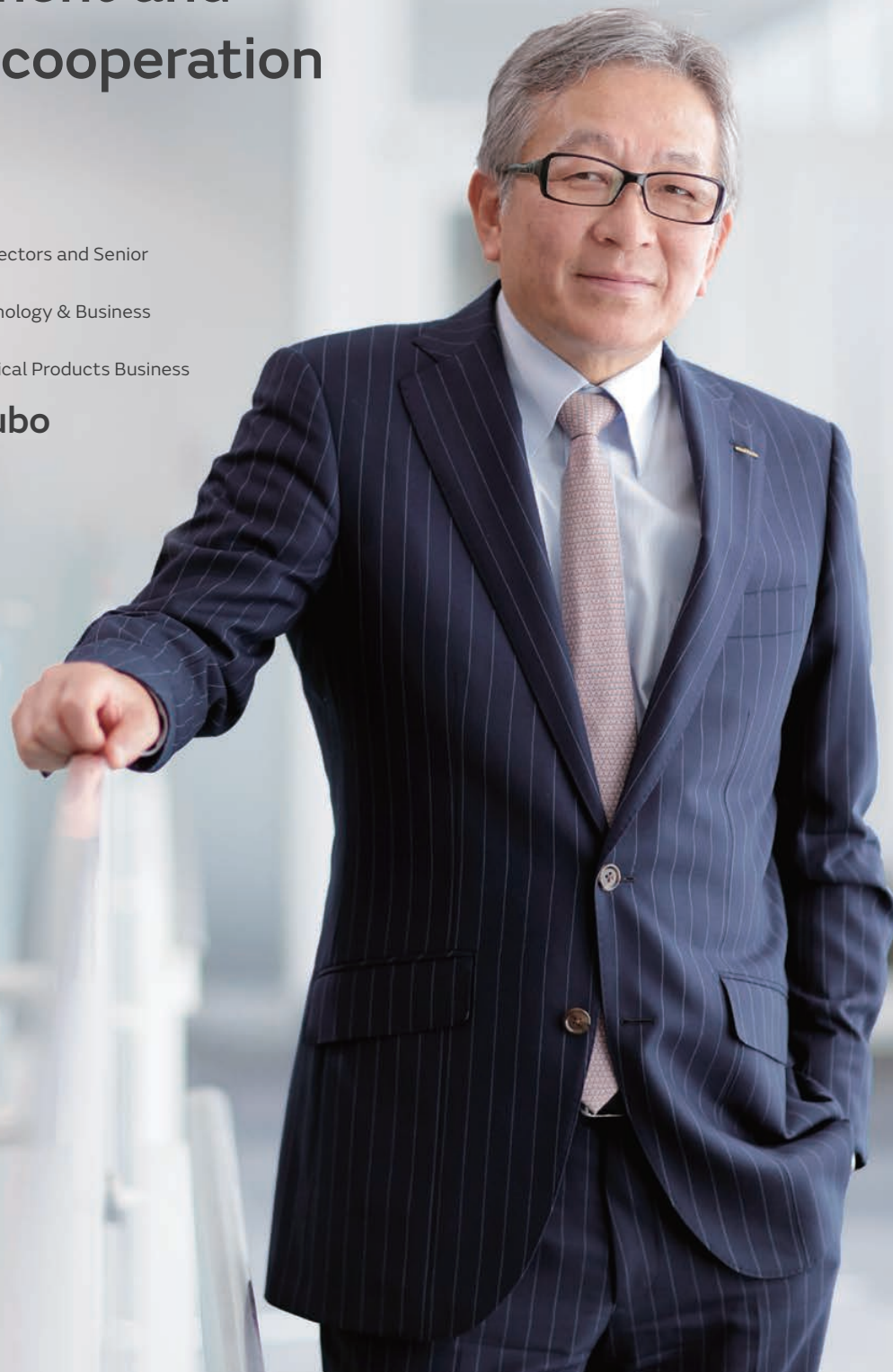


Message from the Director of Corporate Technology & Business Development Unit

Prepare for future business opportunities by promoting knowledge collaboration through essential technology development and external cooperation

Member of the Board of Directors and Senior Executive Vice President
Director of Corporate Technology & Business Development Unit
Executive in Charge of Medical Products Business

Hiroshi Iwatsubo



View of the current electronics industry and direction for technological development

First, I would like to share my perception of the current state of the electronics industry. It cannot be denied that the smartphone and tablet PC markets, which have driven our growth in recent years, have matured and are approaching a transition period for applications. In addition to the predicted decline in consumer confidence in the wake of the COVID-19 pandemic, the demand for components suffered a blow due to delayed demand for applications using 5G communications technology and for events with large crowds. Moreover, in our mobility business, stable growth is expected to continue

because of the adoption of several types of electric vehicles (xEVs) and progress in automated driving technology. However, such growth is insufficient to compensate for the lower telecommunications market demand. Under these circumstances, Murata intends to advance research and development in existing business areas where we can anticipate a certain level of technological evolution while continuing to invest in new businesses where we have yet to gain a foothold. This will position us for the future expansion of electronics usage from 2030 and beyond.

Leveraging Murata's core technologies to support business development

Murata has built a vertically integrated production system ranging from raw materials to finished products and has developed several core technologies to support this process. Among these, materials technology is one of our strengths. Few electronic component manufacturers have the capacity to work on improvements in terms of characteristics from the raw materials stage. For example, the characteristics of barium titanate used in multilayer ceramic capacitors can be significantly altered simply by adding trace amounts of additives. The many years we have spent devoted to pursuing materials technology and accumulating expertise have led us to create a materials cluster centered around functional ceramics, which has enhanced our competitive edge. More recently, the emergence of materials informatics and the development of chemical analysis technology have posed a risk that relying

on materials technology alone no longer guarantees our competitive edge. At the same time, having quality materials alone does not guarantee superior products. Specific know-how is essential in various phases, such as production processes and product design. We intend to create a platform for this know-how alongside materials technology and refine our core technologies to develop technologies that further differentiate us from competitors and innovation.

We also believe that the pursuit of materials technology will lead to the creation of new business opportunities. As our materials portfolio expands, we are also researching materials technology that could potentially be used in the areas of the environment and wellness, which we have identified as challenge fields.

Contributing to solving social issues through our business in the area of wellness

In the long-term Vision 2030, Murata advocates practicing a 3-layer portfolio management strategy. As background, the company has grown through technological innovation in the first and second layers. In layer 3 business, we have been able to promote research and development while strengthening collaboration with external parties such as companies, universities, and research institutes more than ever before. I also feel that our internal discussions have deepened. As a result, we have launched new products in the third layer faster than in the past. In particular, the wellness market has been attracting increased attention regarding preventative healthcare. With that, several hardware and solutions have

emerged that utilize Murata's electronics to maintain and improve health and enrich people's lives.

Given the current scale of Murata's business, some might question why we would engage in a business worth several hundred million yen. However, as we face an uncertain future, the layer 3 business is one way for us to expand our options, and we believe it is indispensable for sustainable value creation. Engaging business in areas where Murata has no to limited experience comes with risk. However, being overly risk-averse makes it more difficult to take on new challenges, particularly for large companies. Therefore, we will first identify areas where we can demonstrate our strengths by

capturing quick and small successes that do not damage our financial base. Once we establish a commercialization plan,

we will then allocate the necessary resources to develop our layer 3 business.

Examples of medical and healthcare devices



Infusion Controller SEEVOL
An infusion device that features the industry's first camera-based droplet detection function and a natural drop system that does not put mechanical stress on the patient's blood vessels. It helps promote the more widespread use of chemotherapy that is easier and less of a burden for both patients and healthcare professionals.



Murata CPAP MX
A device used in continuous positive airway pressure(CPAP) therapy, in which air is pumped through a mask worn during sleep as the main treatment for obstructive sleep apnea syndrome. It is compact, lightweight for easy portability, and its unique built-in air intake silencer makes it extremely quiet.

Note: The information on medical devices included in this report is intended for shareholders and investors and is not intended to attract clients or give medical advice.

Promotion of knowledge collaboration with different industries

While our vertically integrated business model is one of our strengths, collaborating with external parties is essential for achieving innovation. Presently, I am focused on promoting knowledge collaboration with different industries. Through many years of personal involvement in Murata's research and development, I have felt that relying solely on in-house innovation is limited due to the lack of speed. To develop our business without missing opportunities, we must recognize the importance of serendipity (accidental discovery), which begins with meeting people. In the future, we will further implement mechanisms that proactively create opportunities for innovation. For example, the first

KUMIHIMO Tech Camp with Murata, held in fiscal 2022, offered Murata's connectivity modules and sensors to start-up businesses and universities to solicit ideas for new products and services. We received numerous ideas that align with the concept of "changing the world with Murata hardware." We will consider collaborating with the Grand Prize and Excellence Award winning companies to realize their ideas and work with them towards commercialization. While the first event involved our standard products, the second event, scheduled for fiscal 2023, will leverage new devices and technologies not introduced on our website. We are also preparing to hold the same event not only in Japan but also overseas. We want to continue this project in a more enhanced form to explore new ways to solve challenges using our products and technologies. We will contribute to the development of society by creating innovative services and solutions by combining our products and technologies with the imaginative power of start-up businesses and universities.



For details of the KUMIHIMO Tech Camp with Murata, please see here. ▶ 

Training engineers by raising awareness and supporting career development

In addition to creating business opportunities, the co-creation with external parties also allows our in-house engineers to gain valuable inspiration. We also promote our Venture Study Abroad Program, where employees are sent to a startup company for engineer training. This initiative was born out of the desire to place our engineers at the forefront of innovation, where they can acquire industry knowledge and experience the blood, sweat, and tears that go into creative work. They can then apply that experience to subsequent tasks and the launch of new opportunities. There will be many pitfalls that come with expanding business into areas that are uncharted territory for Murata. In such circumstances, we must develop human resources with good judgment about deciding who to partner with outside the company and from who to seek guidance. Although many individuals at manufacturing companies are uncomfortable with negotiating externally, we want our engineers to have opportunities to connect with external parties and build experiences. Supporting engineers' career development is another essential part of their training. While there is a need for personnel who are devoted to the research and development of specific technologies, it would be prefer situation that most engineers would rotate departments and work on two or more technologies rather than stay in the same place for a long time, both for the benefit of their career and for the company. Some engineers believe that if they continue researching and developing the same technology for 10 years, they will become experts in that field, but they are mistaken. Experience in two or more fields creates a chemical reaction that drives innovation. We have many technology domains, career development

programs such as education systems for young to mid-career employees and corporate executive candidates, and practical training programs for young employees overseas. We hope our engineers will take advantage of these opportunities to advance their careers and that management staff will encourage their subordinates to do the same. We also established a personnel system in which engineers with highly specialized skills, such as product design and equipment development, are rewarded with generous compensation. To become a manager, one must have the skills to manage subordinates. However, we were concerned that human resources possessing technical expertise were not being adequately rewarded in terms of compensation. By changing this system, we aim to improve the engagement of engineers and promote the appointment of talented human resources from outside the company to become an organization that generates sustainable innovation.



Contributing to the enrichment of society as an Innovator in Electronics

In creating a new business model for the third layer, it is important to have mechanisms in place for commercializing technologies and ideas at a fast pace. When making business decisions, I believe that it might be too late with a new business idea and plan such as the one which 8 out of 10 people can understand after hearing a single explanation. Because someone must have already thought of the idea. Most people still cannot envision ways to solve social issues in our challenge fields, such as environment and wellness, which we will focus on in the future. By hypothesizing and preparing for what technologies will be necessary from 2030 onward, we

will create new value that only Murata can offer and create a continuous cycle of social and economic value. I feel strongly that engineer training is an important matter not only for Murata, but for the whole industrial world in Japan. Since the time of our founder, we have placed great importance on industry-academia collaboration. Going forward, we will continue to focus on a resonance that transcends the boundary between business and academia so that Kyoto, where our head office is located, will produce engineers who will excel on the global stage. We want to ask all our stakeholders for their continued support throughout this cycle.